

Claims

1. Littrow grating with a multiplicity of parallel
 5 diffraction structures succeeding one another periodically,
 which are arranged on a support defining a base area and
 each incorporate a blaze flank inclined towards the base
 area substantially at the Littrow angle and a counter-
 flank, wherein the blaze flank and the counter-flank form
 10 at the apex of a diffraction structure an apex angle which
 is less than 90° ,

characterised in that

15 the counter-flank (6) comprises at least two substantially
 plane area sections (7, 8) which, bordering one another and
 inclined relative to one another by an angle of inclination
 (β), extend parallel with the extension direction of the
 diffraction structure (3), wherein due to the inclination
 20 of the at least two area sections (7, 8) relative to one
 another the counter-flank (6) all in all exhibits a concave
 surface viewed from the light incidence side.

2. Littrow grating according to claim 1, characterised in
 25 that the area sections (7, 8) exhibit a width ratio of 0.5
 to 2 measured normal to the extension direction of the
 diffraction structures (3).

3. Littrow grating according to claim 1 or 2,
 30 characterised in that the angle of inclination (β) lies in
 the range from 90° to 150° .

claim 1

4. Littrow grating according to ~~one of the preceding claims~~, characterised in that it consists of quartz glass.

claim 1

5. Littrow grating according to ~~one of the preceding claims~~, characterised in that it comprises a coating increasing the reflectivity.

6. Littrow grating according to claim 5, characterised in that the coating is an aluminium coating.

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claim 1

7. Littrow grating according to ~~one of the preceding claims~~, characterised in that it comprises a dielectric layer system.

8. Littrow grating according to claim 7, characterised in that the dielectric layer system comprises layers of Al_2O_3 and MgF_2 .

9. Littrow grating according to claim 7, characterised in that the dielectric layer system comprises layers of LaF_3 and MgF_2 .

claim 1

10. Littrow grating according to ~~one of the preceding claims~~, characterised in that the blaze flank (5) comprises, measured normal to the extension direction of the diffraction structures (3), a minimum width of $g \cos(\theta)$, where g designates the grating period of the Littrow grating and θ the Littrow angle.

claim 1

11. Use of a Littrow grating according to ~~one of claims 1 to 10~~ in a diffraction order of the incident light wavelength above or equal to the 15th diffraction order.

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